Family Xiphiidae

Swordfishes

Body elongate, with long tail. Caudal peduncle slender, with strong keel on each side, not present in young. Head large, compressed. Upper jaw with long, extended, depressed sword-like blade, formed of vomer, ethmoid and premaxillaries. Eye high, rounded. Mouth rather large. Teeth small in young, absent with age. Interorbital broad. Gills 4, slit behind fourth. Branchiostegals 7. Vertebrae short, 14 + 12. Air bladder present. Stomach siphonal. Pyloric appendages very numerous. Intestinal canal long, with many folds. Skin

Leaded

other
str[illegible]

covered with rough granulations in young, smooth or naked with age. In very young fins high, both jaws prolonged as beak and head with long spines. Dorsal of adult long, usually divided, continuous in young and without distinct spinous part or both parts formed of soft rays. Second dorsal on tail, smaller than first dorsal, fin rays formed in skin. Anal divided with age. Caudal widely forked. Pectoral partly lateral. Ventrals absent.

One genus.

Follow—Incl Caps
Leador

134789 765

Scales 54 in lateral line to caudal base and 13 more on latter; 5 above, 8 below, 24 predorsal forward to nostrils, 2 rows on cheek below eye; caudal finely scaled basally and other fins all more or less with some fine scales. Scales with 6 basal radiating striae; 58 to 61 apical denticles, with 6 or 7 transverse series of basal elements; circuli fine.

D. XI-I, 19, I, second spine $1^{9}/_{10}$ in head, first branched ray $2^{2}/_{5}$; A. III, 18, I, first branched ray $2^{1}/_{2}$; caudal $1^{1}/_{2}$, hind edge very slightly emarginate; least depth of caudal peduncle $3^{3}/_{4}$; pectoral $1^{2}/_{3}$; ventral $1^{3}/_{5}$.

Pale brown, lighter below. Traces of silvery white lateral axial streak, now grayish, embracing lateral line at caudal peduncle. Iris slate gray. Fin membranes transparent, spinous dorsal sprinkled with deep or blackish brown dots terminally.

East Indies, Philippines. This species related to Sillago sihama, but with much shorter body, larger scales and much larger eye.

57903 U.S.N.M. Zamboanga. Dr. E.A. Mearns. Length 133 mm. As Sillago maculata.

Sillago sihama (Forskål)

Atherina sihama FORSKÅL, Descript. Animal., 1775, pp. xiii, 70 (Lohaja, Red Sea). - BONNATERRE, Tabl. Ichth., 1788, p. 178 (Red Sea). - GMELIN, Syst. Nat. Linn., Vol. 1, 1789, p. 1396 (Red Sea). - LACÉPÈDE, Hist. Nat. Poiss., Vol. 5, 1803, pp. 371, 373 (Arabia).

Platycephalus sihamus SCHNEIDER, Syst. Ichth. Bloch, 1801, p. 60 (Red Sea).

Genus Xiphias Linnaeus

Xiphias Linnaeus, Syst. Nat., ed. 10, pt. 1, (1758) p. 248, (Type Xiphias gladius Linnaeus, monotypic.)

Phaethonichthys Nichols, Amer. Mus. Novit., New York, No. 94, p. 2, October 19, 1923, ~~p. 2~~. (Type Phaethonichthys tuberculatus Nichols = Xiphias gladius Linnaeus, monotypic.)

Body somewhat compressed, sloping slightly or gradually back. Caudal peduncle small, compressed. Head compressed, robust. Jaws greatly extended forward in long slender beaks, upper depressed; lower shorter and much more so with age. Eye large in young, small with age. Mouth cleft extends back beyond eye. Nostrils very small, separated, close before eye. Interorbital low. No gill rakers. Preopercle with large spine in very young, soon disappearing with age. Air bladder simple. Pelvic arch ~~simple~~ obsolete. No scales or skin smooth with age. First dorsal inserted over gill opening, falcate and elevated,

8 pt. Leaded
Follow—Incl Caps

134789 766

Sillago sihama [illegible], Atlas Reise Nördl. Afrika, 1825, p. 9, pl. 3, fig. 1 (Red Sea); Neue Wirbelth. Fische, 1835, pp. 100, 103 (note). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 243 (Red Sea, Ceylon, Malayan Peninsula, Amboyna, Philippines, Canton, China, Nepal); Proc. Zool. Soc. London, 1861, pt. 221 (Nepal specimen). - GILL, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 504 (compiled). - DAY, Fishes of Malabar, 1865, p. 47; Proc. Zool. Soc. London, 1865, p. 18 (Cochin, Malabar Coast). - BLEEKER, Nederland. Tijdschr. Dierk., vol. 2, 1865, p. 56 (Amoy). - SCHMELTZ, Cat. Mus. Godeffroy, No. 3, 1866, p. 8 (East Indies); No. 4, 1869, p. 16 (Singapore). - DAY, Proc. Zool. Soc. London, 1870, pt. 2, p. 35 (Nancowry, Nicobars); p. 686 (Andamans). - Klunzinger, Verh. Zool. bot. Ges Wien, vol. 20, 1870, p. 818 (Red Sea). - BLEEKER, Verh. Kon. Akad. Wet. Amsterdam, vol. 14, 1874, p. 67 (Sumatra, Nias, Pinang, Singapore, Bintang, Banka, Biliton, Java, Madura, Bali, Borneo, Celebes, Sumbawa, Sangi, Batjan, Obi major, Buru, Ceram, Amboina, Timor). - PETERS, Monatsb. Akad. Wiss. Berlin, 1876(1877), p. 836 (Bougainville, Solomons). - KLUNZINGER, Sitz. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol 80, pt. 1, 1879, p. 369 (Australia). - SCHMELTZ, Cat. Mus. Godeffroy, No. 7, 1879, p. 44 (East Indies). - GÜNTHER, Rep. Voy. Challenger, vol. 1, 1880, p. 56 (Nares Harbor, Admiralty Island). - KÁROLI, Termész. Füzetek, Budapest, vol. 5, 1881, p. 162 (Ceylon; Rarangoon). - MACLEAY, Proc Linn. Soc. New South Wales, vol. 7, 1882, p. 360 (New Guinea). - KLUNZINGER, Fische Roth. Meer., vol. 1, 1884, p. 123. - STEINDACHNER and DÖDERLEIN, Denkschr. Akad. Wiss. Wien, Math.-nat. Kl., vol. 49, pt. 1, 1885, p. 192 (Japan). - THURSTON, Pearl Fisher. Gulf of Manaar, 1890, p. 93 (Tuticorin). - STEINDACHNER, Sitz. Ber. Akad. Wiss. Wien, Math.-nat.

though height rather less than body depth with age. First anal similar to first dorsal, smaller, less curved and far posterior. Second dorsal and second anal opposite, small, similar. Pectoral moderate, falcate.

Large fishes of the open seas, valued as food and in some regions the object of extensive fisheries.

Follow—Incl Caps
8 pt. Leaded

134789 767

Kl., vol. 102, pt. 1, 1893, p. 237 (Swatow). - ELERA, Cat. Fauna Filip., vol. 1, 1895, p. 500 (Luzon, Manila). - RUTTER, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 87 (Swatow). - JORDAN and SNYDER, Proc. U.S. Nat. Mus., vol. 24, 1902, p. 486 (Tokyo, Tsuruga, Onomichi, Formosa). - JORDAN and EVERMANN, Proc. U.S. Nat. Mus., vol. 25, 1902, p. 360, p. 360 (Formosa). - JOHNSTONE, Fasc. Malayensis Annandale and Robinson Zool. 2, 1903, p. 295 (outside Patani Bay). - FOWLER, Journ. Akad. Nat Sci. Philadelphia, ser. 2, vol. 12, 1904, p. 549 (Padang). - PELLEGRIN Bull. Soc. Zool. France, vol. 30, 1905, p. 83 (Baie d'Along, Tonkin). - JORDAN and SEALE, Proc. U.S. Nat. Mus., vol. 28, 1905, p. 782 (Negros); Proc. Davenport Acad. Sci., vol. 10, 1905, p. 12 (Hong Kong). - SMITH and POPE, Proc. U.S. Nat. Mus., vol. 31, 1906, p. 478 (Yamagawa, Japan). - PELLEGRIN, Bull. Mus. Nat. Hist. Paris, vol. 13, 1907, p. 20 (Baie de Tuléar, Madagascar). - JORDAN and RICHARDSON, Mem. Carnegie Mus., vol. 6, No. 4, Aug. 28, 1909, p. 192 (Takao). - FRANZ, Abh. Bayer. Akad. Wiss., Math.-phys. Kl., vol. 4, Suppl. vol. 1910, p. 83 (Aburatsubu). - SEALE, Philippine Journ. Sci., vol. 5, No. 4, Oct. 1910, p. 281 (Sandakan). - WEBER, Siboga Exped., vol. 57, 1913, p. 267 (Makassar; Obi Major, Saleyer). - BEAUFORT, Bijd. Dierk. Amsterdam, vol. 19, 1913, p. 119 (Ambon, Batu merah). - JORDAN and METZ, Mem. Carnegie Mus., vol. 6, No. 1, June 1913, p. 41 (Chinnampo, Fusan, Korea, Japan, Swatow, Hong Kong, Formosa, Philippines). - PELLEGRIN, Bull. Soc. Zool. France, vol. 39, 1914, p. 224 (Fort Dauphin, Madagascar). - SEALE, Philippine Journ. Sci., vol. 9, No. 1, 1914, p. 69 (Hong Kong). - JORDAN and THOMPSON, Mem. Carnegie Mus., vol. 6, No. 4, Sept. 1914, p. 259 (Misaki). - PEARSON, Ceylon Administr. Rep., 1915-1918, pp. F10, F12. - JORDAN and STARKS, Ann. Carnegie Mus., vol. 11,

Xiphias gladius Linnaeus

Xiphias gladius Linnaeus, Syst. Nat., ed. 10, pt. 1, 1758, p. 248, (type locality, European Ocean). — Gmelin, Syst. Nat. Linn., vol. 1, p. 1149, 1789 (Atlantic). — Walbaum, Artedi Pisc., vol. 3, p. 207, 1792 (copied). — Lacépède, Hist. Nat. Poiss., vol. 2, p. 288, pl. 9, fig. 1, 1800 (Africa).

— Cuvier, Hist. Nat. Poiss., vol. 8, p. 255, pls. 225-226, 1831 (Cape of Good Hope). — Günther, Cat. Fish. Brit. Mus., vol. 2, p. 511, 1860 (Atlantic). — Swainson, Nat. Hist. Animals, vol. 2, p. 239, 1839 (reference).

165 mm. (Savage.)

Reunion, Madagascar, Malabar.

Cut 34 Genus Gerreomorpha Alleyne and Macleay

Gerreomorpha Alleyne and Macleay, Proc. Linn. Soc. New South Wales, vol. 1, 1876, p. 274. Type Gerreomorpha rostrata Alleyne and Macleay, monotypic.

distinguished from Gerres chiefly by the presence of 10 dorsal spines.

Several species in the western Pacific and Indian Ocean.

— Hutton, Trans. New Zealand Inst., vol. 8, p. 211, 1873 (Auckland). — Lütken, Kw. Danske Vid. Selsk. Skrift. Kjöbenhavn, vol. 12, no. 6, pp. 441, 592, pl. 10, 1880 (young). — Goode, Rep. U. S. Fish Comm., pt. 8, p. 292, 1880 (1883) (compiled), p. 297 (Rhode Island; Massachusetts), pl. 1, pl. 11 (skeleton), p. 14 (copied), pl. 16 (young), pl. 21 (sword of young). — Philippi, Anal. Univ. Chile, p. 33, 1887 (Iquique; Talcahuano). — Lawoagl, Hist. Nat. Madagascar, Poiss., p. 519, 1891 (reference). — J. T. Abbott, Proc. Acad. Nat. Sci. Philadelphia, p. 346, 1899 (reference).

Faint traces of small dark postocular spots. Fins all uniformly pale brownish.

Southern Japan, from Nagasaki to Wakamoura and Riukiu, where it is said to be rare. None of the specimens show the dark caudal peduncle saddle quite contrasted, due to pale or yellowish anterior area. I cannot find any character for the separation of the Queensland Pseudupeneus jeffi.

56259 U.S.N.M., Bulan, Philippines. Bureau of Fisheries (No. 3861).
Length 100 mm.

61165 U.S.N.M. Wakanoura, Japan. Jordan and Snyder. Length 312 to 315 mm. 3 examples.

— Delfin, Cat. Peces de Chile, p. 51, 1901.

— Snyder, Bull. U. S. Fish Comm., vol. 22, p. 523, 1902 (1904) (Honolulu).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 770, 1904 (Jan. 30, 1905) (Italy). — Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 168, fig. 61, 1903 (1905) (Hilo). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 126, 1913 (reference). — Evermann and Radcliffe, Bull. U. S. Nat. Mus., No. 95, p. 56, 1917 (reference). — Jordan and Jordan, Mem. Carnegie Mus., vol. 10, No. 1, p. 30, dec. 1922 (Honolulu). — Regan, Ann. Mag. Nat. Hist., ser. 9, vol. 13, p. 224, fig. (young), 1924.

tube of lateral line, with 6 to 8 short tubules. Scales with 6 or 7 basal radiating striae; 215 to 220 apical denticles, with 9 to 13 transverse series of basal elements, circuli very fine.

D. VIII — I, 8, I, third spine 1 2/5 to 1 3/5 in head, first branched ray 2 1/10 to 2 1/5; A. I, 6 I, first branched ray 2 to 2 2/5; caudal 1 1/8 to 1 1/5, deeply forked; least depth of caudal peduncle 2 3/5 to 2 3/4; pectoral 1 1/4 to 1 1/3; ventral 1 1/3 to 1 2/5.

Largely light uniform brown. Only faint traces of 3 arched olive streaks from snout tip, though hardly evident beyond trunk. Deep blackish or dark brown saddle on caudal peduncle mediamly above 4 or 5 ~~scales~~ in extent and reaching below to lateral line.

— Jordan and Evermann, Descr. Pap. Cal. Acad. Sci., vol. 12, p. 71, pl. 20, Sep. 30, 1926 (Santa Catalina; Hawaii; New Zealand; North Atlantic) (on photographs). — Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 85, text fig., pl. 30, fig. 4, Oct. 1927 (Cape Verd). — Jordan, Journ. Pan Pac. Res. Inst., vol. 2, no. 4, p. 5, Oct.-Dec. 1927 (Samoa). — Fowler, Mem. Bishop Mus., vol. 10, p. 136, fig. 29 (young), 1928 (Honolulu). — McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 266, Sep. 10, 1929 (reference). — Anonymous, Illustrat. Jap. Aquat. Plants and Animals, vol. 1, pl. 26, fig. 2, 1931. — Fowler, Mem. Bishop Mus., vol. 11, no. 5, p. 325, 1931 (reference). — Deraniyagala, Ceylon Journ. Sci., vol. 18, pt. 1, p. 57, Dec. 22, 1933 (Hibbadamoa record in 1883).

Depth 3 to 3 1/2; head 2 7/8 to 3 1/8, width 2 to 2 1/5. Snout 1 4/5 to 2 1/4 in head; eye 5 3/4 to 4 1/10, 1 4/5 to 3 in snout, 1 1/8 to [illegible] in interorbital; maxillary reaches 4/5 to 9/10 to eye, expansion 1 1/10 to 1 1/8, length 2 1/3 to 2 4/5 in head; barbels reach opposite hind preopercle edge or length 1 1/2 to 1 2/3 in head; teeth uniserial, rather large, short, conic, 12 or 13 above, 10 or 11 below, none on palate; interorbital 3 to 3 2/3, well convex. Gill rakers 6+24, lanceolate, 1 2/3 in gill filaments, which equal eye.

Scales 27 or 28 in lateral line to caudal base and 1 or 2 more on latter; 3 above, 6 below, 13 or 14 predorsal; 3 rows on cheek below eye to lower preopercle edge. Each

Xiphias gladius Hector, Trans. New Zealand Inst., vol. 7, 1873, p. 246 (Auckland). — Cheeseman, Trans. New Zealand Inst., vol. 8, 1875, p. 219 (Shelly Bay, Auckland).

Xiphias platypterus Shaw, General Zool., vol. 4, p. 101, 1804 (on Linnaeus).

Xiphias rondeleti & Leach, Wern. Mem., vol. 2, 1818, p. 58, pl. 2, fig. 1 (type locality, Firth of Forth).

Phaethonichthys tuberculatus Nichols, Amer. Mus. Novit., New York, ~~vol. 23, pt. 1~~, No. 94, October 19, 1923, p. 2, fig. 1 (tail) (type locality, Rapa Island, Austral Group).

Xiphias estara Phillips.

Follow—Incl Card 134789 768

Nos. 3,4, Nov. 5, 1917, p. 455 (Ceylon, Takao, Cavite).- FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 62, 1922, p. 68 (Cebu). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 248 (Durban). - PEARSON, Ceylon Administr. Rep., 1926, pp. F26, F27, F29. - VINCIGUERRA, Ann. Mus. Civ. Stor. Nat. Genova, ser. 3, vol. 10, 1926, p. 583 (Sarawak). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 286 (Santa Maria, Vigan, San Fernando, Orani, Orion, Philippines). - FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 71, 1927, p. 8 (Benkoelen, Sumatra). - FOWLER, Journ. Bombay Nat. Hist. Soc., vol. 32, No. 4, May 31, 1928 p. 709 (Ceylon); Mem. Bishop Mus., vol. 10, 1928, p. 235 (copied GÜNTHER). - TIRANT, Service Océanogr. Pêch. Indo Chine, Note 6, 1929, p. 169 (Phu Yen). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1929(1930), p. 611 (Hong Kong), p. 654 (Padang).

Sillago ihama FOWLER, Journ. Bombay Nat. Hist. Soc., vol. 33, No. 1, 1928, p. 116 (Bombay). (Misprint.)

Sciaena malabarica SCHNEIDER, Syst. Ichth. Bloch, 1801, p. 81, pl. 19, (Tranquebar.

Sillago malabarica CANTOR, Journ. Asiat. Soc. Bengal, vol. 18, pt. 2, 1849, p. 1003 (Pinang, Singapore, Malay Peninsula). - BLEEKER, Act. Soc. Sci. Ind. Néerland., No. 6, vol. 6, 1859, p. 2 (Doreh, New Guinea). - GILL, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 504 (compiled). - PÖHL, Cat. Mus. Godeffroy, No. 9, 1884, p. 32 (East Indies).

Sillago acuta CUVIER, Règne Animal, vol. 2, 1817, p. 258, (Sea of the Indies; Hist. Nat. Poiss., vol. 3, 1829, p. 400 (Pondicherry, Calcutta, Malabar, Batavia). - MASON, Burmah Nat. Resources, 1860, p. 694.- KNER, Reise Novara, Fische, 1865, p. 128 (Ceylon; Madras). - JOUAN, Mém. Soc. Hist. Nat. Cherbourg, ser. 2, vol. 3, 1868, p. 252 (Hong Kong).

Depth 8 2/5; head 2 1/4, width 6. Snout 1 1/3 in head; eye 3 1/2 in postocular, 2 1/4 in interorbital; mandible extends forward in snout as measured from front of eye 2 2/5; rictal groove extends behind eye 3/5 eye diameter; interorbital 8 1/6, rather low; broad, slightly convex. Gill filaments equal 1/5 eye diameters.

Skin rough or finely asperous to touch. Young rougher than adult, with row of small wide set tubercles parallel with upper profile and another below or along lower side of trunk and tail.

D. 46, fifth ray 2 7/8 in total head length; A. 17, fourth ray 4; caudal 2 1/4, deeply forked, slender lobes pointed; pectoral

814 B... Soc
Follow Lit
Smithsonian Deposit
134783

macrodens, Dentex, 120.

macrolepis, Plagiogenion, 350.

Sillago, 416, 424, 425.

macronema, Perupeneus, 279.

macronemus, Mullus, 279.

Nemipterus, 128.

Pseudupeneus, 272, 279.

Synagris, 128.

Upeneus, 279.

macrophthalmus, Corvina, 376, 385.

Dentex, 118.

Otolithus, 376.

Pseudosciaena, 376.

Sciaena, 376.

Sparus, 117.

macroptera, Sciaena, 408, 412.

Umbrina, 412.

macropterus, Johnius, 412.

Sciaena, 412.

Umbrina, 412.

macrosoma, Diapterus, 241.

Gerres, 228, 241, 242.

Gerres (Xystaema), 241.

macrurus, Heterognathodon, 72.

Pentapodus, 70, 72.

Pentapus, 72.

2 2/5, rays I, 14.

Gray brown above, whitish below. Iris grayish. Fins brownish.

South Africa, Japan, New South Wales, New Zealand, Polynesia, Hawaii, California, Chili. Also in the Atlantic, Mediterranean and Caribbean.

U. S. N. M., No. 48318. Italy. L. E. Meeks. Length 580 mm.

8 pt. Leaded

Follow—Incl Caps

134789 781

56215 U.S.N.M. Bulan, Philippines. Bureau of Fisheries (4094). Length 200 mm. [illegible] Sillago macrolepis. These differ from Bleeker's figure of the preceding name in the presence of 4 rows of cheek scales and the spotted coloration, though this latter was largely faded out.

59933 U.S.N.M. Port Jackson, New South Wales. D.G. Stead. Length 206 to 226 mm. 4 examples.

52930 A.N.S.P. Hong Kong, China. Henry W. Fowler. Length 110 mm.

53079, 53080 A.N.S.P. Delagoa Bay, Portuguese East Africa. July 1923. H.W. Bell Marley. Length 106 to 138 mm.

~~Sillago japonica Schlegel~~

Sillago japonica Schlegel

Sillago japonica SCHLEGEL, Fauna Japonica, Poiss., pts. 2-4, 1843, p. 23, p. 10, fig. 1, (Japan). - RICHARDSON, Ichth. China Japan, 1846, p. 223 (Canton). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 244 (compiled). - GILL, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 504 (compiled). - BLEEKER, Nederland. Tijdschr. Dierk., vol. 2, 1865, p. 56 (Amoy); Verh. Kon. Akad. Wet. Amsterdam, vol. 14, 1874, p. 69 (Java, Amboina). - GÜNTHER, Rep. Voy. Challenger, vol. 1, 1880, p. 66 (Inland Sea off Japan). - KÁROLI, Termész. Füzetek, Budapest, vol. 5, 1881, p. 162 (Yokohama; Nagasaki). - SAUVAGE, Bull. Soc. Philom., Paris, ser. 7, vol. 5, 1881, p. 105 (Swatow, China). - STEINDACHNER and Döderlein, Denkschr. Akad. Wiss. Wien, Math.-nat. Kl., vol. 49, pt. 1, 1885, p. 192 (Japan; Tschifu). - STEINDACHNER, Ann. Hofmus. Wien, vol. 11, 1896, p. 208 (Japan). - ISHIKAWA and MATSUURA, Prelim.

— Nystrom, Bihang Kon. Svenska. Vet. Akad. Handligar, Stockholm, vol. 13, (1887, no. 4, p. 27 (Nagasaki.)